At Your Service ...

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HOUSTON 22, TEXAS, 1919 Collingsworth St.	Capital 7-6237
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KOPPERS®

Pressure-Treated

LUMBER • PLYWOOD
POLES • PILING • TIMBER

FOR LIGHT AND HEAVY CONSTRUCTION

•

WOOD PROTECTED AGAINST

• DECAY • INSECTS
• MARINE ORGANISMS
• FIRE • WEATHER

Is the Most Economical, Practical and Permanent Building Material

A.I.A. File No. 19-A-3

KOPPERS COMPANY, INC. PITTSBURGH 19, PA.
WOOD PRESERVING DIVISION

THE "WHY" OF PRESSURE TREATMENT

Wood of itself does not decompose or wear out but like any other construction material it does have natural enemies such as decay, insects, marine organisms, weather and fire. Unlike other construction materials, wood is unique in that protection from these destructive agents can be effectively provided by pressure impregnants specifically designed to combat these natural enemies.

THE "HOW" OF PRESSURE TREATMENT

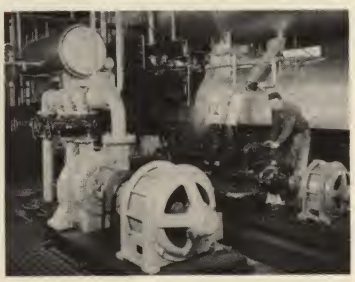
Maximum penetration of the preservative is absolutely necessary to protect lumber against decay or termite attack. Brush, dip or other surface treatments only coat the wood and at best give limited, temporary protection. Only the pressure-treating process forces the preservative deep into the wood cells protecting all of the wood subject to attack. Strength, resiliency, or other natural qualities of the wood are not impaired. Below is a pictorial story of how long service life is imparted to lumber by the pressure-treating process.



A charge of lumber is pushed into a huge steel cylinder made to withstand high pressures.



The cylinder door is bolted shut and a vacuum in excess of 22″ mercury is pulled to evacuate air from the wood cells and increase receptivity to the treating solution.



When the cylinder is full of solution, the vacuum is broken and more solution is forced into the cylinder to develop a pressure in excess of 150 pounds per square inch.



Pressure is held until the solution is forced deep into the wood cells. The duration of the pressure phase depends on the species of wood being treated and the retention desired.

TYPES OF WOOD PRESERVATIVES...

There are five general classes of wood preservatives:

1. **CREOSOTE PRESERVATIVES**
2. **WATER-BORNE SALT PRESERVATIVES**
3. **PENTA-BASE PRESERVATIVES**
4. **FIRE-PROTECTIVE PRESERVATIVES**
5. **RESIN PRESERVATIVES**

Selection of any one is dependent on the end use of the product and the conditions to which the wood will be exposed. Because Koppers specializes in all five it can, without bias, recommend the right preservative to meet specific conditions.

FOR YOUR INFORMATION

TECHNICAL SERVICE

Your local Koppers Sales Office or Koppers Technical Department, Orrville, Ohio (Murray 2-3015), will welcome your requests for assistance in determining the right wood preservative for all types of uses and all conditions of service. With over 50 years' experience in advising railroads, utilities and other large users of pressure-treated wood, Koppers can furnish you on request detailed information on the following uses of pressure-treated materials:

- **BUILDINGS, BINS, SHEDS**
 Columns—Doors—Flooring—Framework—Joists—Pile Foundations—Rafters—Roofing—Plank Siding—Sills—Sheathing—Sleepers—Stairs—Trusses—Window Frames
- **BRIDGES, TRESTLES, AND TIPPLES**
 Bracing—Caps—Cribbing—Pile Foundations—Ribbon Guards—Stringers—Ties—Trusses
- **FARM BUILDINGS AND FENCING**
 Barns—Hog Houses—Corn Cribs—Silos—Fences—Feeders—Posts—Rails—Poles
- **COOLING TOWERS**
 Fill-Drift Eliminators—Fandeck—Fan Stack—Inner Wall—Outer Wall—Louvers—Structural Framing
- **UTILITY MATERIALS**
 Poles—Cross Arms—Anchor Logs—Timbers—Lumber
- **PIERS, DOCKS, WHARVES**
 Bracing—Bulkheads—Caps—Floor—Pile Foundations—Stringers—Stairs—Posts—Railings—Walkways—Jetties
- **PLATFORMS**
 Flooring—Supports—Nailing Strips—Hand Rails
- **SIGN BOARDS**
 Boards—Posts—Braces—Framework Lumber—Poles
- **TANKS, SUMPS AND VATS**
 Lagging for Insulation—Pile Foundations—Supports—Sills—Structural Timbers—Planks—Staves—Septic Tanks
- **TRANSPORTATION MATERIALS**
 Cross Ties—Switch Ties—Crossing Panels—Car and Truck Lumber
- **RECREATIONAL FACILITIES**
 Picnic Tables—Benches—Steps—Fencing—Shelters—Signs—Guard Posts and Rails—Cabins—Bleachers, etc.

PLANT SERVICE

Koppers has thirty-five modern pressure-treating plants throughout the country, offering pressure-treated wood and treating service. Transit rates are available for economical movement from lumber producing areas to final destinations. In addition to up-to-date pressure-treating equipment, facilities are available for the conditioning and preframing of lumber prior to treatment and when required, for drying wood before and after treatment.

1 CREOSOTE PRESERVATIVES

Creosote is the oldest wood preservative known. No other preservative has yet demonstrated, through service, the durability, dependability and general utility of creosote. Creosote and creosote-coal tar solutions are the only preservatives that provide satisfactory protection in salt water against marine borer attack. Creosote will not harm humans or animals but destroys decay fungi and insects. The only way to assure absolute protection is through pressure treatment. Creosote preservatives are recommended in these applications:

FOR USE IN

- FOUNDATION PILES
- BRIDGE TIMBERS
- MUD SILLS
- FENCE POSTS
- WHARVES
- BOATS
- CROSS TIES
- PLATFORMS
- CROSSING TIMBERS
- RAILS
- DECKING
- MARINE PILING
- DOCKS
- CORRALS
- BARNS & ANIMAL SHELTERS
- TIMBER CRIBBING
- POLES
- WAREHOUSES

and other uses

ADVANTAGES

Pressure-creosoted lumber has 4 to 8 times the service life of untreated wood. Savings in replacement costs over the years will repay many times over the cost of pressure treatment. Maintenance costs are thus lowered, and most important of all, failure of wood members and weakening of structures due to termites and decay are eliminated.

SPECIAL CHARACTERISTICS

Pressure-creosoted wood should be used when the need for long service life is paramount and where such special properties as absence of odor, color or oil-free surface for certain types of painting is not considered important. For such applications other types of preservatives should be specified.



Complete stocks of millions of board feet of Koppers pressure-treated lumber—strategically located in 35 plants throughout the country.

2 WATER-BORNE SALT PRESERVATIVES

There are two major water-borne salt preservative treatments available from Koppers. They are Erdalith® and Wolman® salts. Erdalith preservative is primarily used to treat lumber for cooling tower construction to combat serious decay problems which otherwise arise from the use of untreated wood. Wolman preservative salts are widely used in Koppers and licensee treating plants throughout this country and in the tropics.

Wolmanized® lumber (any species of wood pressure-treated with Wolman salts) is the clean, treated lumber most frequently specified by architects because of its proven long service in residential construction and in all types of industrial and commercial applications. More complete information on Wolmanized treated lumber is to be found in Sweets' File or can be obtained by writing to the Wolman Preservative Department, Koppers Company, Inc., 750 Koppers Bldg., Pittsburgh 19, Pennsylvania.

FOR USE IN

- FOOD PROCESSING PLANTS
- FACTORIES
- HOMES
- STADIUMS
- BOARD WALKS
- GARAGES
- COOLING TOWERS
- PULP & PAPER MILLS
- ICE HOUSES
- TEXTILE MILLS
- FARM STRUCTURES
- BOX CAR DECKING
- SCHOOLS
- HOSPITALS
- CHURCHES
- BOARDWALKS
- BRIDGES & PIERS
- BOATS

ADVANTAGES

Wolmanized pressure-treated lumber provides lasting protection against decay and termites; it is clean and odorless. Wolmanized lumber is paintable and can readily be glued with any good adhesive, including the newer synthetic glues. The preservative salts are fiber-fixed in the wood and resist leaching under high humidities.

SPECIAL CHARACTERISTICS

Water-borne salt treated lumber should be kiln dried or air dried after treatment to a moisture content suited to the intended use, whether for painting or where shrinkage can be a serious fault. When treated lumber is cut on the job, concentrated preservative solution should be painted on cut surfaces.

3 PENTA-BASE PRESERVATIVES

These preservatives are insoluble in water, but are sufficiently soluble in light and heavy petroleum to make a treating solution. In recent years, penta in the heavier oils, has had increasing use for outdoor applications exposed to weather, decay and termites. Used with lighter, more volatile oil vehicles, water-repellent penta has been used widely for indoor applications, for sleepers in school gym floors, and for the treatment of hardwoods.

FOR USE IN

HEAVY OILS
- R. R. CAR DECKING
- LOADING PLATFORMS
- POLES AND CROSSARMS

LIGHT OILS
- STADIUM SEATS
- SIDING
- FENCING

ADVANTAGES

Wood, pressure-treated with Penta-Base Preservatives, offers positive protection against decay and insect attack. Koppers water-repellent formulations provide a surface that is free from oil and odor. Milled hardwoods and softwoods can be treated without fear of grain raising, checking or splitting.

SPECIAL CHARACTERISTICS

Wood, treated with Penta-Base Preservatives, is not recommended for marine use. Regular penta-treated forest products will become brown and blotchy when exposed to the weather; this condition will disappear after extended service. Lumber, treated with regular penta, will stain plaster and cannot be painted easily.

Forrest products pressure-treated with Koppers Water-Repellent Penta quickly bleaches to a driftwood gray when exposed to the weather. Koppers Water-Repellent Penta-treated materials can be painted readily.

4 FIRE-PROTECTIVE PRESERVATIVES

After a decade of intensive research, Koppers has developed NON-COM fire protected lumber, a non-combustible material that automatically provides a superior resistance to both *fire* and *flame* spread. Wood, pressure-impregnated with NON-COM, will not support combustion. NON-COM pressure-treated lumber will char slowly where flame touches it, but will confine the fire to its point of origin by checking the spread of flame.

NON-COM fire protected wood is:

LISTED: by the Underwriters' Laboratories, Inc. with a Fire Hazard Classification rating of 10-15 for both flame spread and fuel contribution with no evidence of significant progressive combustion in a 30-minute test duration.

APPROVED: by Factory Mutual Engineering Division and Factory Insurance Association as having met the requirements of a basically incombustible material.

CLASSIFIED: as an incombustible roof deck and support material by 17 Midwestern State Rating Bureaus and the State of Washington.

FOR USE IN

- INDUSTRIAL WAREHOUSES
- ROOF DECKS
- INTERIOR PARTITIONS
- STUDDING AND TRIM
- STRUCTURAL MEMBERS
- PALLETS
- WET PROCESS INDUSTRIES
- AIRPLANE HANGARS
- MUNITIONS PLANTS
- DOCKS AND WAREHOUSES

ADVANTAGES

NON-COM fire protected lumber and plywood is colorless, odorless, and can be painted. The chemicals pressure-impregnated into NON-COM lumber and plywood also provide decay and termite protection.

SPECIAL CHARACTERISTICS

When NON-COM treated lumber is to be used in places where high moisture content or shrinkage after installation would be a disadvantage, the lumber shall be kiln dried or air dried to a moisture content suited to the intended use. It is not recommended for outdoor use.

5 RESIN PRESERVATIVES

Koppers resin treatments impart special qualities to wood such as increased dimensional stability, hardness and resistance to abrasions and alkalis. KP-resin treated wood offers high acid resistance and is recommended where shrinkage or swelling are undesirable. "Kofural" treated materials are similar in features to KP-treated wood except that "Kofural" treated wood is resistant to alkaline conditions.

FOR USE IN

- TANKS
- DUCK BOARDS
- FILTER MEMBERS
- PATTERN LUMBER
- FLUMES
- VATS

and other uses

KOPPERS OFFERS THESE RESIN TREATMENTS

	KP	KOFURAL
Color	Tan	Black
Type of Resin	Thermosetting	Thermosetting
Resistance to Acids	Suitable for continuous contact	Suitable for continuous contact
Resistance to Alkali	Not recommended	Resistant
Dimensional Stability	Excellent—it reduces shrinkage and swellage of wood to one half that of untreated species.	Excellent—it reduces shrinkage and swellage of wood to one half that of untreated species.
Hardness	Increased 50-100%	Increased 50-100%
Resistance to insects and decay	Good	Good
Weight per cubic foot	40 lbs.	40 lbs.

HOW TO SPECIFY PRESSURE-TREATED WOOD

The following information is necessary when specifying and buying pressure-treated material:

A. Description of material; that is, lumber, posts, etc.
B. Species, size and grade.
C. Treatment specifications. Use Federal Specification TT-W-571c or American Wood Preservers' Association current treatment specifications. The two sets of specifications are essentially identical.
D. Preservative. Specifications are below. For the same preservative they are practically identical.
E. Type of exposure.
F. Preservative retention.

Preservative	Federal Spec.	AWPA Spec.	Other
Creosote	TT-W-556	P-1	ASTM D-390
Creosote Coal-Tar Solution	TT-W-566	P-2	ASTM D-391
Wolman* Salts	TT-W-573	P-5	ASTM D-1034
Pentachlorophenol	TT-W-570	P-8, P-9	MIL-P-906B
Erdalith* (Chromated Copper Arsenate)	TT-W-00550	P-5	
NON-COM (Federal Formulation #5)	MIL-C-2865		

*Reg. U.S. Pat. Off.

KOPPERS

KOPPERS COMPANY, INC.

WOOD PRESERVING DIVISION · PITTSBURGH 19, PA.

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